

III. REMARKS

In the Office Action, claims 1-3, 5-8 and 10 were rejected under 35 U.S.C. 103 as being unpatentable over Osawa (GB 2 275 800 A) in view of Bush (US 6,397,186) for reasons set forth in the Action. Claim 4 was rejected under 35 U.S.C. 103 as being unpatentable over Osawa in view of Bush and Darbee (US 6,130,726), and claim 9 was rejected under 35 U.S.C. 103 as being unpatentable over Osawa in view of Bush for reasons set forth in the Office Action.

In this response, new claim 11, depending from claim 1, is amended to emphasize a feature of the invention, namely, that the method may also comprise the requesting of further information if the control information is unknown or is ambiguous or is incomplete. This is discussed in detail, and examples are given in the specification on pages 6-9. Further claims 12-21 are presented for further description of the invention, these claims finding support in the present specification (page 4 at line 23 through page 5 at line 18).

In the Office Action, with respect to the rejections of independent claims 1 and 10, the examiner notes that Osawa does not explicitly disclose inputting of control information followed by interpretation in accordance with available applications with checking whether the information is known, unambiguous, and complete; and in the case of claim 10, noting that Osawa does signal a user of the invention to resolve a lack of knowledge or ambiguity or incompleteness of the control information. The examiner then cites Bush to teach the missing elements of the claimed invention.

It is urged that Bush fails to supply the elements of the invention that are missing from the disclosure of Osawa. In Bush, a major part of his teaching is directed to the processing of a spoken word to extract intelligence from the spoken word so that his system can respond to a spoken command. For example, in Fig. 14a, the right hand column discloses process steps of generating a pattern (S309), performing pattern recognition (S310), and recognition of appliance category name; these steps relating to the extraction of intelligence from the spoken word. This does not relate to the implementation of requests to provide further data, such as is present already in present claim 10 and as is presented in claim 11. A similar observation applies to Fig. 16a, right hand column, at blocks S369, S370, and S371 wherein there is detection of a voice command, the generation of a pattern, and pattern recognition.

The examiner, in support of his utilization of Bush in the rejection of the claims 1 and 10, refers to the Bush teachings in column 5 at lines 30-32, and in col. 22 at lines 42-47, wherein Bush teaches that the user may speak the word "Sports" to obtain a specific television channel; and that an indicator illuminates to show presence of a recognition error. Clearly, these cited passages of Bush do not anticipate or suggest the passage of claim 11 nor the corresponding material already in claim 10.

Therefore, it is urged that Osawa, taken alone or in combination with one or more of the other cited references, does not suggest the invention as set forth in the independent claims nor in any of the dependent claims. Furthermore, it is urged that the cited passages from Bush would not motivate one to combine the

teachings of the cited references. Accordingly, it is believed that this argument and amendment has overcome the grounds of rejection so as to secure allowable subject matter in the claims.

The following additional argument is presented to show further grounds for overcoming the rejections of the claims 1-10, and to show the presence of allowable subject matter in the new claims 11-21.

The Bush teaching relates to a wireless, programmable sound-activated and voice-operated remote control transmitter. The remote control transmitter can be used for hands-free speech control operation to a plurality of remotely controlled appliances, each of which is normally controlled with one or more signals from an associated remote control transmitter (cf. abstract).

Essentially, the universal remote control transmitter 10 comprises a speech recognition circuit 50 connected to a microphone 20 and a transmitter such as an infrared signal controlling circuit 70 with infrared light-emitting diode 80 (cf. Fig. 1). The universal remote control transmitter 10 is operable with both speaker independent and speaker dependent vocabulary.

Bush's teachings depart from Osawa's teachings in that Bush also incorporates speech control functionality into Osawa's remote control system. Bush does not teach inputting control information independently from a permanently predetermined menu structure. On the contrary, Bush's system also comprises a permanently predetermined menu structure as evidenced in column

46, line 63 to column 47, line 33 and table 2. Here, if the command "Channel" is recognized, a pattern queuing routine is initiated and a sub-menu comprising digits for selecting the channel is made available for the user. Bush also states in column 29, lines 53-58 that the signal generated by the speech recognition circuit is equivalent to a signal generated when a button is depressed on a keypad of a conventional remote control transmitter. In other words, this clearly indicates that Bush's teachings only bring speech control functionality to Osawa's teachings and as a consequence, Bush does not disclose inputting control information independently from a permanently predetermined menu structure, since conventional remote control transmitters always have to obey the predetermined menu structure as also disclosed in Osawa.

A speaker independent vocabulary structure provides the user with means of navigating multiple linked recognition vocabulary sets. At any one time, a single recognition set is made available by the speech recognition circuit. A voice command in one recognition vocabulary set may be used to activate another recognition set or to communicate instructions to the infrared signal controlling circuit 70 (cf. column 4, lines 52-60 and column 13, lines 31-39). The communicated instructions are associated with multiple infrared signals to one or more appliances. This means, the speaker independent vocabulary structure is hierarchically organized in accordance with well-known hierarchically structured graphical user interfaces. Examples illustrating the hierarchical vocabulary structure are given with reference to tables 1 to 7 (cf. columns 46 ff.). The speaker independent speech recognition is preferably available to the user by providing factory-programmed speaker independent commands.

The speaker dependent vocabulary comprises custom speaker dependent voice commands trained by the user and associated with infrared signals (cf. column 5, lines 14-18). The speaker dependent voice commands are based on user-specific reference patterns. A voice training routine is operable to detect a voice command inputted by the user through the microphone and generates a corresponding user-specific reference pattern from the detected voice command (cf. column 40 ff.; in particular column 40, lines 7-32 and Fig. 15).

Moreover, the universal remote control transmitter 10 supports macros, which associates multiple infrared signals to one or more appliances in response to a single voice command by the user (cf. column 5, lines 19-32). Such macros are part of the speaker dependent vocabulary. A macro can be trained by the user in that the user navigates by speech recognition through the speaker independent vocabulary structure to identify one or more infrared signals to one or more appliances, the user identifies by speech recognition one or more custom speaker dependent voice commands, and/or the user identifies by speech recognition one or more other macros (cf. Figs. 16a and 16b).

During speech recognition, a pattern is generated by the speech recognition circuit once a sound exceeding a silent level threshold is detected. The generated pattern is analyzed in order to determine if the pattern matches with any on the references of an active vocabulary set comprising speaker independent vocabulary and/or speaker dependent vocabulary sets. In case that a match cannot be identified, a visual indicator is provided indicating to the user that no match was identified. Otherwise, a voice command is identified from the active

vocabulary set, which activates another vocabulary set or imitates communication of one or more instructions associated with the identified voice command to the infrared signal controlling circuit in order to transmit one or more infrared signals to one or more appliances.

In addition to inputting control information independently from a permanently predetermined menu structure, Bush also fails to disclose that the control information is interpreted in accordance with available ones of the application devices by checking whether the control information is known, unambiguous and complete for one of the application devices. The Official Action alleges that the mentioned features would have been disclosed by Bush in col. 5, lines 30-32; col. 22, lines 42-47. This is respectfully traversed by the Applicants.

The referenced part in column 5 only discloses that the user can create his own commands to select a TV channel. This is disclosed in col. 42, line 8 to col. 45, line 45 in more detail. Creating one's own commands for turning a TV channel, for example, is called macro programming. With macro programming the user can associate sequentially executable instructions with a macro name and when the user utters the macro name, the instructions are executed in the same order in which they were stored (col. 45, lines 25-32). The macro is stored for the previously selected appliance device (col. 43, lines 14-15) and the user is expected to select a voice command from the default recognition vocabulary set such as "power", "channel", "change" etc. If the instruction is to activate a different recognition vocabulary set, said set is activated. The user may continue to navigate through different linked, recognition vocabulary sets, until a voice command is recognized and that is associated with

an instruction to output a signal to the infrared controlling circuit (col. 44, lines 20-28). In other words, this is merely replacing pushing of a button with a voice command when the TV is on. Even though the user can create his own commands, a predetermined menu structure needs still to be obeyed. In other words, the referred part only teaches that the user can create his own commands or macros for certain operations, and it fails to teach anything about checking whether the control information is known, unambiguous and complete for one of the application devices.

The referenced part in column 22 only discloses that if the user's utterance is not recognized, the user is informed about the failure. Depending on the value in the recognition error counter, the speech recognition circuit enters either sound activation mode or continues to listen to user's utterances (col. 22, lines 42-58). In other words, the speech recognition circuit only checks whether an exact match is found. If the user utters something that is not unambiguous and/or complete, it is interpreted as an error and the user is expected to re-utter the command or, if the error counter has reached its maximum value, the speech recognition is shut. Bush fails to teach or suggest checking whether the control information is known, unambiguous and complete, since there is no possibility to issue commands that may be recognized but are incomplete or may be recognized but are ambiguous. These are immediately interpreted as an error.

It should also be noted that Bush teaches that the target appliance must always be selected before any voice commands can be issued (col. 45, line 64 to col. 46, line 5). In other words, informing the user of an unidentified command is only performed

when the utterance is not recognized inside the current recognition vocabulary. Therefore, since the vocabulary depends on the selected target appliance (col. 46, lines 6-16), Bush fails to disclose checking whether the control information is known, unambiguous and complete for one of the application devices.

Osawa has been already discussed in connection with earlier Office Actions for this application. For the sake of completeness, a description of Osawa is presented, as follows.

Owasa teaches a remote control system for controlling a plurality of devices applicable for remote control of audio and/or video appliances on the basis of a menu structure presented to a user.

In particular, the Osawa system comprises a remote controller 9, a master controller 1 including a signal controlling system 10 and a remote controller control section 11, a plurality of audio and/or video devices 2 to 6 connectable to the master controller 1 and output means 7, 8 including a video monitor and a loud speaker for presenting a video/audio program.

With reference to Fig. 3a, upon actuating a power switch 99a of the remote controller 9, a power on command and an identification data demand signal are transmitted to the master controller 1 (cf. page 8 to page 9). Thereupon, the main source of the master controller 1 and the sources of the audio/video appliances are turned on (cf. page 9, lines 3-7). A connection detecting circuit 111 of the remote controller control section 11 determines which audio/video appliances are connected to the master controller and corresponding identification data is stored in a memory 113 of

the remote controller control section 111 (cf. page 9, lines 7-12).

The Audio/video appliances identification data is transferred to the remote controller 9 (cf. page 9, lines 19-24) and thereupon, the program checks and confirms that command data for the audio/video appliances identified by the identification data exists in a command memory 95A of the remote controller 9 (cf. page 10, lines 12-16). Presuming that command data for all audio/video appliances connected to the master controller is already stored in the remote controller, the names of the corresponding audio/video appliances are displayed on a display panel 96 of the remote controller 9 as shown in Fig. 8 (cf. page 11, lines 4-24).

The display panel 96 is operable by the user to select one of the displayed audio/video appliances, upon selection of which keys each representing an optional command of the selected audio/video appliance are shown on the display panel 96 (cf. Fig. 9 which shows illustratively optional commands for controlling a CD player). The displayed keys representing optional commands are operable by the user to actuate control signals to the selected audio/video appliance enabling remote control thereof (cf. page 13, lines 4-14 and Fig. 3b).

Thus, Osawa teaches in detail configuration procedures of the remote controller to establish a hierarchically structured graphical user interface allowing a user to remotely control a plurality of audio/video appliances connectable to the remote controller.

Darbee relates to a remote control for operating a consumer electronics device. The remote control is provided with a display for presenting program scheduling and/or advertising information without causing an interruption in content that is being depicted on an associated television monitor, where the advertising information is associated with the actually displayed program. The program scheduling, i.e. a program guide or a content scheduling guide, is preferably periodically downloaded through a communication link to the remote control. The user can navigate through the program scheduling by the means of several control keys.

The program scheduling can be organized on the basis of categories (EZ channels) such as News, Weather, Sports etc. to be displayed to the user and through which the user is enabled to navigate. While on or inside such a category (EZ channel) a specific key, i.e. an EZ NAV key 20, is operable, upon which the television is tuned to a channel associated to a sponsor, which sponsors the currently selected category (EZ channel). In case there does not exist a sponsor, an error message is displayed to the user. Darbee is employed by the examiner to show a teaching of the feature of present claim 4 dealing with the marking of a control input that is not reliably interpreted.

In the rejection of claims 1 and 10, the examiner refers to Osawa and in particular to page 11, line 4 to page 12, line 1 and page 13, lines 5-14 to support his opinion that Osawa discloses a method for controlling a system comprising a plurality of application devices, where control information input is interpreted in accordance with available application devices and an application device is controlled in accordance with the result of the interpretation.

It is argued that it is not apparent in which way Osawa allegedly teaches any interpretation of the user control input in the sense of the present invention. In particular, the Examiner's reference to page 11, line 4 to page 12, line 1, where configuration procedure during start-up of the remote control in accordance with Osawa is described, seems not to negate patentability of the present claims.

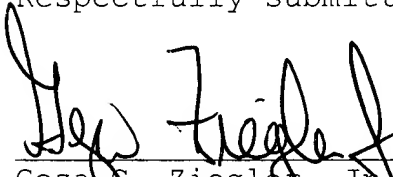
Nevertheless, Osawa discloses a remote control and a method thereof for controlling a system comprising a plurality of application devices (appliances). Moreover, Osawa also teaches a processing of control information input in accordance with available application devices and controlling of an application device in accordance with the result of the processing. The interpretation of the control information, as set forth in the present claims, provides for recognition of an input command. It is believed that this is neither taught nor suggested by Osawa.

Thus, Osawa and Bush, taken either individually or in combination do not anticipate or suggest the invention as set forth in independent claims 1 and 10.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of \$370 is enclosed for a one-month extension of time and the additional claims fee. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,



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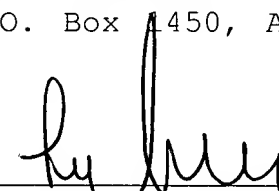
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